

WHAT IS CLAIMED IS:

1. A method for enumerating microbial colonies in a sample comprising:
 - 5 (a) transferring a sample comprising a microbe(s) of interest in a liquid medium to the wells of a multi-well filter plate;
 - (b) removing excess media from the wells;
 - (c) allowing sufficient time for the microbe(s) to grow into discrete colonies on residual growth media captured within and under the filter plate; and
 - 10 (d) enumerating the microbial colonies in the sample by using a means suitable for enumeration of samples in multi-well format.
2. A method in accordance with claim 1 wherein the microbe(s) are bacteria and the microbial colonies are bacterial colonies.
- 15 3. A method in accordance with claim 1 wherein the microbe(s) are yeast and the microbial colonies are colonies of yeast.
4. A method in accordance with claim 1 wherein the microbe(s) are fungi and the microbial colonies are fungal colonies.
5. A method in accordance with claim 1 wherein the multi-well filter plate of step (a) comprises growth medium.
- 20 6. A method in accordance with claim 1 wherein the multi-well filter plate is a 96 well filter plate.
7. A method in accordance with claim 2 wherein the bacteria are grown on the filter plate for a period of 14-18 hours.
- 25 8. A method in accordance with claim 1 wherein the filter plate is a Millipore™ 96 well HV plate.
9. A method in accordance with claim 1 wherein the filter plate is a Millipore™ Multiscreen™ HV 0.45 µm Opaque Sterile Filtration plate.
10. A method in accordance with claim 1 wherein the excess media is removed by vacuum filtration.
- 30 11. A method in accordance with claim 1 wherein the excess media is removed by centrifugation.
12. A method in accordance with claim 1 wherein the enumeration of microbial colonies is accomplished with a device capable of acquiring images and/or information from wells in multi-well format.
- 35

13. A method in accordance with claim 12 wherein the device is capable of acquiring images and/or information from wells in 96 well format.
14. A method in accordance with claim 12 wherein the number of bacteria in the sample is determined using a computer-assisted video imaging and analysis system.
15. A method in accordance with claim 12 wherein the number of bacteria in the sample is determined using an ImmunoSpot™ Analyzer.
16. A method in accordance with claim 1 wherein the microbe(s) prior to step (a) had been contacted with an antimicrobial agent.
17. A method in accordance with claim 16 wherein the microbe(s) prior to step (a) had been contacted with an antimicrobial antiserum.
18. A method in accordance with claim 16 wherein the microbe(s) prior to step (a) were further contacted with complement or active components thereof.
19. A method in accordance with claim 17 wherein the microbe(s) prior to step (a) were further contacted with an effector cell capable of engulfing the microbe(s).
20. A method in accordance with claim 18 wherein the effector cell is a phagocyte.
21. A method in accordance with claim 18 wherein the effector cell is a differentiated HL-60 cell.
22. A method in accordance with claim 18 wherein the effector cell is a peripheral blood polymorphonuclear leukocyte.
23. A method in accordance with claim 2 wherein the bacteria is a gram-positive bacteria.
24. A method in accordance with claim 2 wherein the bacteria is a gram-negative bacteria.
25. A method in accordance with claim 2 wherein the bacteria is a pathogenic microorganism.
26. A method in accordance with claim 2 wherein the bacteria is *Streptococcus pneumoniae*.
27. A method in accordance with claim 2 wherein the bacteria is *Neisseria meningitidis*.
28. A method in accordance with claim 2 wherein the bacteria is *Escherichia coli*.

29. A method in accordance with claim 2 wherein the bacteria is *Staphylococcus aureus*.
30. A method in accordance with claim 2 wherein the bacteria is *Bacillus anthracis*.
- 5 31. A method for analyzing microbe(s), their growth and/or viability in a sample comprising:
- (a) transferring a sample comprising a microbe(s) of interest in a liquid medium to the wells of a multi-well filter plate;
 - (b) removing excess media from the wells;
 - 10 (c) allowing sufficient time for the microbe(s) to grow into discrete colonies on residual growth media captured within and under the filter plate; and
 - (d) analyzing the microbe(s), their growth and/or viability in the sample by a means suitable for analysis of samples in multi-well format.
- 15 32. A method in accordance with claim 30 wherein the microbe(s) are bacteria.
33. A method in accordance with claim 30 wherein the microbe(s) are yeast.
- 20 34. A method in accordance with claim 30 wherein the microbe(s) are fungi.
35. A method in accordance with claim 30 wherein the multi-well filter plate of step (a) comprises growth medium.
- 25 36. A method in accordance with claim 33 wherein the multi-well filter plate is a 96 well filter plate.
37. A method in accordance with claim 31 wherein the bacteria are grown for a period of 14-18 hours.
38. A method in accordance with claim 30 wherein the filter plate is a Millipore™ 96 well HV plate.
- 30 39. A method in accordance with claim 30 wherein the filter plate is a Millipore™ Multiscreen™ HV 0.45 µm Opaque Sterile Filtration plate.
40. A method in accordance with claim 30 wherein the excess media is removed by vacuum filtration.
- 35 41. A method in accordance with claim 30 wherein the excess media is removed by centrifugation.

42. A method in accordance with claim 30 wherein microbe(s), their growth and/or viability is analyzed with a device capable of acquiring images and/or information from wells in multi-well format.
43. A method in accordance with claim 40 wherein the device is
5 capable of acquiring images and/or information from wells in 96 well format.
44. A method in accordance with claim 41 wherein the number of bacteria in the sample is determined using a computer-assisted video imaging and analysis system.
45. A method in accordance with claim 41 wherein the microbe(s)
10 are analyzed using an ImmunoSpot™ Analyzer.
46. A method in accordance with claim 30 wherein the microbe(s) prior to step (a) had been contacted with an antimicrobial agent.
47. A method in accordance with claim 30 wherein the microbe(s) prior to step (a) had been contacted with antimicrobial antiserum.
48. A method in accordance with claim 44 wherein the microbe(s)
15 prior to step (a) were further contacted with complement or active components thereof.
49. A method in accordance with claim 45 wherein the microbe(s) prior to step (a) were further contacted with an effector cell capable of engulfing the
20 microbe(s).
50. A method in accordance with claim 46 wherein the effector cell is a phagocyte.
51. A method in accordance with claim 46 wherein the effector cell is a differentiated HL-60 cell.
52. A method in accordance with claim 46 wherein the effector cell
25 is a peripheral blood polymorphonuclear leukocyte.
53. A method in accordance with claim 31 wherein the bacteria is a gram-positive bacteria.
54. A method in accordance with claim 31 wherein the bacteria is a
30 gram-negative bacteria.
55. A method in accordance with claim 31 wherein the bacteria is a pathogenic microorganism.
56. A method in accordance with claim 31 wherein the bacteria is *Streptococcus pneumoniae*.

57. A method in accordance with claim 31 wherein the bacteria is *Neisseria meningitidis*.
58. A method in accordance with claim 31 wherein the bacteria is *Escherichia coli*.
- 5 59. A method in accordance with claim 31 wherein the bacteria is *Staphylococcus aureus*.
60. A method in accordance with claim 31 wherein the bacteria is *Bacillus anthracis*.
61. A method for evaluating antimicrobial agents comprising:
- 10 (a) contacting a sample comprising a microbe(s) of interest with the antimicrobial agent;
- (b) transferring the sample comprising the microbe(s) of interest in a liquid medium to the wells of a multi-well filter plate;
- 15 (c) removing excess media from the wells;
- (d) allowing sufficient time for the microbe(s) to grow into discrete colonies on residual growth media captured within and under the filter plate; and
- 20 (e) evaluating the effect of the antimicrobial agent on the growth and/or viability of the microbe(s) with a means suitable for analysis of samples in multi-well format.
62. A method for evaluating antimicrobial agents comprising:
- (a) transferring a sample comprising a microbe(s) of interest in a liquid medium to the wells of a multi-well filter plate;
- 25 (b) contacting the sample comprising the microbe(s) of interest with the antimicrobial agent;
- (c) removing excess media from the wells;
- (d) allowing sufficient time for the microbe(s) to grow into discrete colonies on residual growth media captured within and under the filter plate;
- 30 and
- (e) evaluating the effect of the antimicrobial agent on the growth and/or viability of the microbe(s) with a means suitable for analysis of samples in multi-well format.

63. A method in accordance with claim 59 wherein the antimicrobial agent is a monoclonal antibodies present within hybridoma culture supernatant.